4.14.2. Orbit (II): Infections

fungal

rhinocerebral (rhino-orbitocerebral) zygomycosis (mucormycosis)

- predisposing conditions
  - poorly controlled diabetes (ketoacidosis)
  - corticosteroid use
  - neutropenia
- starts from adjacent sinus infection
- histology
  - granulomatous
  - acute & chronic inflammation
  - necrosis
  - thrombosing vasculitis
  - direct vessel invasion
  - hyphae
    - broad
    - nonseptated
  - stains
    - H&E
    - PAS
    - GMS
- diagnosis
  - nasopharyngeal biopsy

sino-orbital aspergillosis

- starts from adjacent sinus infection
- in healthy or immunocompromised individuals
- slowly progressive
- sclerosing granulomatous disease
- aspergillus
  - difficult to culture
  - hyphae
    - septated
    - 45° angle branching
- mucor is non-septated
- treatment
  - aggressive surgical therapy
  - antifungal agents
- +- fatal with brain extension

allergic fungal sinusitis

- several species of fungi
- noninvasive
- IgE-mediated hypersensitivity reaction in atopic individuals
- may extend into orbit and intracranially

bacterial

- causes
  - bacteremia
  - trauma
  - retained surgical hardware
  - spread from sinuses
- organisms
  - haemophilus influenzae
  - streptococcus
  - staphylococcus aureus
  - clostridium
  - bacteroides
  - klebsiella
  - proteus
  - tuberculosis — necrotizing granulomatous reaction

parasitic

- echinococcus — orbital hydatid cyst
- taenia solium — cysticercosis
- loa loa ocular filariasis — loiasis
- diagnosis
  - ELISA
  - serum antibodies

Ophthalmology Mind Maps/Arman Mashayekhi, MD